California Monthly Climate Summary
June 2010

Weather Highlights

June 2010 was a warmer and drier than average month for California. According to the Western Region Climate Center's California Climate Tracker, the monthly average temperature was 66.8°F which is 0.2°F higher than the long-term average. With a statewide average of 0.22 inches, precipitation for June was 63.2% of the long term average.

June 2010 began with the remnants of a storm with strong moisture ties that hit the North Coast. During the first week temperatures were below normal for the northern part of the state with near-normal conditions elsewhere. By the end of the week the State warmed up with some locations reporting their highest temperatures of the year to date. The second week was uneventful weather-wise. The third week saw the exit of a high pressure system and the influence of a low pressure system come into play for California. Showers were confined to locations in the mountains and northeastern plateau region of the state. June closed out with an upper level low pressure system. Temperatures were below normal, but with the lower atmosphere being dry, precipitation was a non-issue. Once that low pressure system exited, a high pressure system built in and sent temperatures soaring.

Preliminary records, reported on the National Weather Service Record Event Report, shows that statewide there were 28 temperature records tied or broken and 7 precipitation records tied or broken for the month. Of the 28 temperature records set in June, 10 were for new high maximum temperatures while 10 were for new low maximum temperatures. Records were set over 12 days of the month. On June 2nd, Crescent City recorded 2.36 inches of rain which broke the 1966 record of 0.82 inches. The next day Crescent City recorded 1.95 inches of rain which broke that day's record of 1.16 inches set in 1988. On June 12th Needles set a new daily precipitation record with 0.12 inches of rain. The old record was a trace set back in 1953. On June 21st no rain was recorded again for Fresno, CA. This is the only day on the calendar that Fresno has no recorded rain at its COOP site since records began in 1878. On the temperature side of records, Bakersfield tied for 6th in latest first 100 degree day on June 27th. The latest date for Bakersfield to reach 100 or above was July 16th, 1998.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 81 stations recorded a minimum temperature below freezing in June while 59 stations reached or exceeded 100°F at least once during the month. Statewide extremes from the CDEC network of temperature gages are shown below. Also shown are the monthly average extremes from the CIMIS network. A table of regional average minimum, mean, and maximum temperatures from the CDEC and CIMIS networks is also shown at the end of the summary.

Precipitation in June ranged from above average on the north coast to below average for everywhere else. For the CDEC precipitation gages for June 2010, the largest amount of precipitation recorded was the Gasquet Ranger Station in the Smith River Basin on the North Coast with 6.56 inches. This is 790% of the average precipitation for this station for June. At the other end of the spectrum, fifty stations reported zero inches of precipitation for the month. For the CIMIS network, Santa Ynez in Santa Barbara County topped the precipitation charts with 6.07inches for the month and 64 stations recorded no precipitation. Some CIMIS gages may show large precipitation totals if the gages are not covered during irrigation activities so care should be given to review precipitation data used from this network. The 8-Station Index for northern California precipitation recorded 0.4 inches in June with 1 day showing precipitation. On average, 1.0 inches of precipitation is recorded for the 8-Station index in June. Statewide, the average precipitation for June was 93% of the long-term average based on the California Data Exchange Center (CDEC) gages. However, the North Coast's well above normal precipitation offsets the rest of the State's well below normal readings. Precipitation percentages by region from the CDEC gages are shown in a table at the end of this document.

CoCoRaHS Update

June 2010 continues California's second year with CoCoRaHS – the Community Collaborative Rain, Hail and Snow Network. This group uses citizen volunteers to record rain, hail and snow data. The users enter the data online at the CoCoRaHS web site. The web site provides the opportunity to see spatial detail of rain and snow patterns in participating states. As of the end of June 2010, California has 665 volunteers signed up spanning 51 of California's 58 counties. The county with the most volunteers at the end of June is Sonoma with 85 volunteers. For the month of June 7,267reports were recorded for California. The largest daily rain total for CoCoRaHS- CA in June was in Del Norte County with 3.79 inches recorded on 6/3/10. There were no hail reports submitted in June. Thirty-six snow reports were included with the precipitation reports with the largest total snow depth reported was 53 inches in Placer County on 6/1/10. To join CoCoRaHS or find more information, please visit http://www.cocorahs.org.

Snowpack and Water Supply Conditions

As of July 1st, the northern region (from the Trinity to the Feather and Truckee Basins) shows 0.6 inches of snow water equivalent which is 59% of average for this date. The central region (the Yuba Basin to the Merced/Walker Basins) shows 0.1inches of snow water equivalent which is 0% of average for this date. The southern region (the San Joaquin Basin to the Kern Basin) shows 0 inches of snow water equivalent which is 0% of average for this date. The latest water supply index forecast for 2010 shows the Sacramento Basin in the Below Normal category and the San Joaquin Basin in the Above Normal category. Water year 2009 resulted in a Dry category for the Sacramento Basin and Below Normal for the San Joaquin Basin. Water supply information for California can be found at http://cdec.water.ca.gov/water_supply.html. A historical listing of water year categories for both basins can be found at http://cdec.water.ca.gov/cgi-progs/iodir/WSIHIST.

Drought Monitor and Seasonal Outlook

The maps for California's depiction by the Drought Monitor for June 1, 2010 and June 29, 2010 are shown below. The Drought Monitor maps can be found on the National Drought Mitigation Center's (NDMC) website http://drought.unl.edu/dm/. These maps are largely a reflection of precipitation and soil moisture deficit estimates. As of the June 29th depiction, California is depicted in either D0 (abnormally dry), or D1 (moderate drought) conditions. Drought conditions are now limited to the northeast corner of the state on the lee side of the Cascades and Sierra. Drought free area in California was 88.0% for the depiction on June 29th. Maps are updated weekly.

The U.S. Seasonal Drought Outlook for July through September from NOAA depicts California with persisting drought conditions in the remaining drought areas as depicted by the Drought Monitor. This forecast is based on climatology. Updates are provided twice per month. Maps and information can be found at http://www.cpc.noaa.gov/products/expert_assessment/seasonal_drought.html.

The California Nevada River Forecast Center has produced some drought monitoring tools for California. These tools look at the frequency associated with precipitation deficits for the Northern California Eight Station Index and the San Joaquin Five Station Index. Another tool looks at the frequency of end-of-month storage for select reservoirs in California. The frequencies of the observations are related to the Drought Monitor's drought categories D0 through D4. These tools can be found at http://www.cnrfc.noaa.gov/climate.php. For June, the Eight Station Index is in drought free conditions for both the 12-month period and for the 24 month period. The Five Station Index is drought free for both periods as well. For the reservoirs for end-of-June storage, Lake Tahoe, Trinity, and Casitas are at aD1 storage, Lake Berryessa is at D0, and all other reservoirs on the graphic are considered to be drought-free.

ENSO Conditions and Long-Range Outlooks

The El Niño/Southern Oscillation (ENSO) is being classified as ENSO neutral conditions. Equatorial sea surface temperature anomalies for the tropical Pacific have continued to transition to negative values in the Niño 3.4 during the month of June passing the -0.5 degree threshold in late June. The April through June 3-month running mean of the Ocean Niño Index (ONI) is 0.3 which falls below the threshold to qualify for an El Niño event. This is the first value below 0.5 since the April-May-June 2009 reading. Most forecast models have the tropical sea surface temperatures continuing to cool and La Nina conditions present by the latter part of summer of 2010. More information can be found at the Climate Prediction Center's web site: http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ Updates are posted weekly. The latest three month outlook (July through September) from NOAA indicates a higher probability of above normal temperatures for the southeastern part of the State and equal chances elsewhere. For precipitation, the State has equal chances for above or below normal precipitation although little

precipitation falls during this time period. Outlook plots and discussions can be fount at http://www.wrcc.dri.edu/longrang/. General weather information of interest can be found at http://www.noaawatch.gov/. For anomaly information please see http://www.wrcc.dri.edu/anom/cal_anom.html.

Agricultural Data

June 2010 saw crops developing, maturing, and being harvested. Wheat, oat and barley fields were harvested while alfalfa underwent its second and third cutting. Rice fields were emerging slower due to the cooler temperatures. Almond development was also delayed. Walnuts, pistachios, and pecans were sizing nicely. Lemon and Valencia oranges continued to be picked along with strawberries and blueberries. Blackberry picking began in the San Joaquin Valley. Thinning of plum, peach and nectarine orchards was completed. The weather was negatively impacting dry onions while asparagus harvest was completed. Watermelon, honeydew, and cantaloupe fields were planted in Fresno County while many vegetable row crops were harvested. California's rangeland was in excellent shape from the winter and spring rains. June began the annual drying Cattle in the Central Valley were showing good weight gains. Bees were moved to citrus groves for honey production. For further crop information see http://www.nass.usda.gov/index.asp.

Other Climate Summaries

California Climate Tracker (new product of Western Region Climate Center)
Golden Gate Weather Service Climate Summary
NOAA Monthly State of the Climate Report

Statewide Extremes (CDEC)

High Temperature – 115°F (Squaw Lake, Colorado River Desert)
Low Temperature – 8°F (Casa Vieja Meadows, Tulare Basin)
High Precipitation – 6.56 inches (Gasquet Ranger Station, North Coast)
Low Precipitation – 0 inches (50 stations)

Statewide Extremes (CIMIS)

High Average Maximum Temperature – 115^0F (UC San Luis, Imperial County)
Low Average Minimum Temperature – 37.6^0F (Big Bear Lake, San Bernardino County)
High Precipitation – 6.07inches (Santa Ynez, Santa Barbara County)*
Low Precipitation – 0 inches (64 stations)
*Sometimes irrigation water from sprinklers gets counted as precipitation if the gage is not covered.

Statewide Precipitation Statistics

Hydrologic Region	Region Weight	Basin Reporting			Stations Reporting			% of Historic Average	
		Basins	Jun	Oct-Jun	Stations	Jun	Oct-Jun	Jun	Oct-Jun
North Coast	0.27	5	5	5	19	11	10	284%	105%
SF Bay	0.03	2	2	2	6	3	3	4.2%	118%
Central Coast	0.06	3	3	3	11	8	8	3.0%	127%
South Coast	0.06	3	3	3	15	12	12	8.4%	108%
Sacramento River	0.26	5	5	5	43	25	24	31.6%	100%
San Joaquin River	0.12	6	6	6	25	13	13	21.5%	118%
Tulare Lake	0.07	5	5	5	28	23	21	14.4%	117%
North Lahontan	0.04	3	3	3	14	6	6	40.1%	82%
South Lahontan	0.06	3	2	2	15	4	4	0%	117%
Colorado River	0.03	1	1	1	6	4	5	75.0%	167%
Statewide Weighted Average	1	36	35	35	182	109	106	93.0%	110%

Statewide Mean Temperature Data by Hydrologic Region (degrees F)

Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	31	39.7	59.7	85.4
SF Bay	19	48.4	64.2	85.8
Central Coast	36	47.9	62.4	80.5
South Coast	68	49.0	65.6	86.4
Sacramento	92	41.9	64.4	91.7
San Joaquin	74	45.4	65.7	89.1
Tulare Lake	19	33.6	57.2	84.1
North Lahontan	29	32.1	53.3	77.7
South Lahontan	22	42.7	64.7	87.1
Colorado River Desert	22	65.1	85.9	104.6
Statewide Weighted Average	412	42.5	62.9	87.5

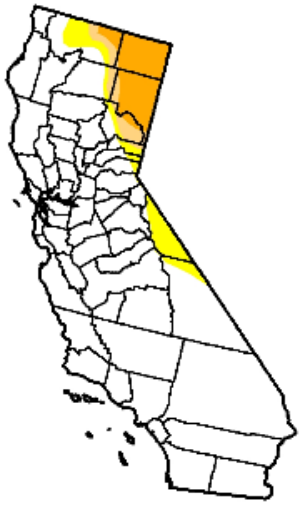
U.S. Drought Monitor

California

June 1, 2010
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	87.0	13.0	8.1	6.0	0.0	0.0
Last Week (05/25/2010 map)	87.0	13.0	8.1	6.0	0.0	0.0
3 Months Ago (03/09/2010 map)	66.7	33.3	10.9	5.9	0.0	0.0
Start of Calendar Year (01/05/2010 map)	6.6	93.4	72.8	9.0	0.0	0.0
Start of Water Year (10/06/2009 map)	0.0	100.0	73.4	45.8	0.0	0.0
One Year Ago (06/02/2009 map)	2.7	97.3	72.3	44.3	0.0	0.0



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements

http://drought.unl.edu/dm

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Author: Brian Fuchs, National Drought Mitigation Center

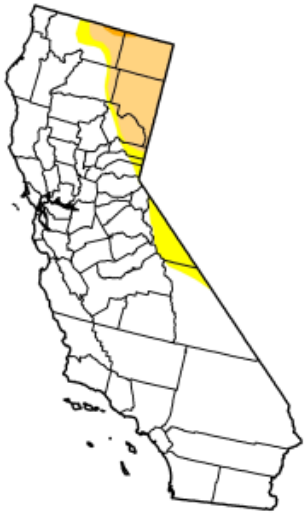
U.S. Drought Monitor

California

June 29, 2010
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	88.0	12.0	8.1	0.2	0.0	0.0
Last Week (06/22/2010 map)	88.0	12.0	8.1	0.2	0.0	0.0
3 Months Ago (04/06/2010 map)	63.2	36.8	9.9	7.1	0.0	0.0
Start of Calendar Year (01/05/2010 map)	6.6	93.4	72.8	9.0	0.0	0.0
Start of Water Year (10/06/2009 map)	0.0	100.0	73.4	45.8	0.0	0.0
One Year Ago (06/30/2009 map)	2.9	97.1	72.0	44.3	0.0	0.0



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http://drought.unl.edu/dm

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Author: R. Tinker, CPC/NOAA